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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/554,298

11/18/2005

Klaus Rutz

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INTELLECTUAL PROPERTY GROUP  
FREDRIKSON & BYRON, P.A.  
200 SOUTH SIXTH STREET  
SUITE 4000  
MINNEAPOLIS, MN 55402

EXAMINER

STIMPERT, PHILIP EARL

ART UNIT

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3746

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/554,298	<b>Applicant(s)</b> RUTZ ET AL.	
	<b>Examiner</b> Philip Stimpert	<b>Art Unit</b> 3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 November 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 October 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claim 3 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. As claim 1 includes the possibility of a connecting rod, and the applicant's specification (page 4, lines 26-30) indicates that use of a connecting rod would require a different governing relationship than that specified in claim 3, the claim is not fully enabled.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
5. Regarding claim 3, the claim recites an equation without defining the variables therein. Applicant's discussion of these variables in the specification and the arguments filed 11/10/2008 is not sufficient to overcome this rejection, as the examiner cannot import limitations from the specification into the claims. For the purposes of

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examination, the examiner is interpreting these variables as described by the applicant, but this should not be viewed as affecting the substance of this rejection.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-4 and 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haberlander et al. (US 6,457,944) in view of Llewellyn (GB 2,130,305).

8. Regarding claim 1, Haberlander et al. teach a method for controlling a diaphragm or piston pump (1, see col. 5, ln. 65-67) that is actuated by a rod (2, see col. 5, ln. 50-55) which is powered by an electric motor (3), comprising moving the pumping element by rotation of the cam. Haberlander et al. teach that the electric motor (3) is asynchronous, and that the operating speed thereof may be varied (such as during the suction cycle). Haberlander et al. do not teach varying the rotating speed of the cam during a compression stroke of the pump. Llewellyn teaches a cam-driven piston pump, and in particular teaches that the cam is driven to drive the pistons at constant speed (page 1, ln. 119) so as to produce a uniform flow rate (page 1, ln. 29-34). Llewellyn teaches accomplishing this by varying a profile of the cam while maintaining rotational speed thereof. However, those of ordinary skill in the art are aware of the mathematical disciplines of kinematics and calculus, and would thus be completely capable of deriving

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formulae for producing constant piston linear velocities given any cam profile.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the pump control system of Haberlander et al. to vary the speed of rotation of the cam to produce constant velocity of the pumping element, as taught by Llewellyn.

9. Regarding claim 2, in performing a combination of Haberlander et al. with the teachings of Llewellyn, the process of producing constant linear velocity in the pumping element would involve compensating for the temporal cosinusoidal movement of the piston.

10. Regarding claim 3, in performing a combination of Haberlander et al. with the teachings of Llewellyn, one of ordinary skill in the art would necessarily arrive at a shape equation equivalent to that expressed in claim 3.

11. Regarding claim 4, in view of the teachings of Haberlander et al., which teaches varying the rotating speed of the cam during an aspiration stroke, and those of Llewellyn of maintaining a constant rotating speed, one of ordinary skill would recognize that the rotation speed of the cam during aspiration is unimportant to the provision of a uniform flow rate. It would therefore be obvious to maintain a constant rotating speed of the cam during aspiration.

12. Regarding claim 7, Haberlander et al. teach the use of sensors (11) to control the cam rotation speed. In the present combination, it would be obvious to use the information provided by these sensors to better control the speed variation engendered by application of the teachings of Llewellyn.

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13. Regarding claim 8, in performing a combination of Haberlander et al. with the teachings of LLewellyn, by simple geometry, it would be obvious that the rotating speed of the cam would decrease to a minimum midway through the compression stroke.

14. Regarding claim 9, Haberlander et al. teach increasing the speed of rotation of the cam (see Fig. 2B) during the aspiration stroke to the maximum.

15. Regarding claim 10, in performing a combination of Haberlander et al. with the teachings of LLewellyn, it would be obvious, again by simple geometry, that the rotation speed would necessarily increase near the end of the compression stroke, in order to maintain the constant linear velocity of the pumping element.

16. Claims 6, 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haberlander et al. in view of LLewellyn as applied to claim 1 above, and further in view of Weigold (WO02/087057, as translated in US 2004/0027014).

17. Regarding claim 6, Haberlander et al. do not teach that the motor is an EC motor. Weigold et al. teach an EC motor (see Fig. 1) that is used to drive a coolant pump. As Haberlander et al. do not disclose the details of their pump, it would have been obvious to one of ordinary skill in the art to use an EC motor such as that taught by Weigold in order to provide the necessary motor for implementing the system of Haberlander et al.

18. Regarding claim 11, Haberlander et al. teach the provision of rotor position sensors (11), which would be obvious to make integral with the motor.

19. Regarding claim 12, in performing a combination of Haberlander et al. with the teachings of LLewellyn, it would be obvious to use the information from the sensors (11) to provide improved control of the cam rotation.

***Response to Arguments***

20. Applicant's arguments, see page 4, filed 10 November 2008, with respect to the drawings have been fully considered and are persuasive. The objection to the drawings has been withdrawn.

21. Applicant's remaining arguments have been fully considered but they are not persuasive.

22. With respect to indefiniteness and enablement, the examiner reminds the applicant that an examiner cannot import limitations from arguments or the specification into the claims. It will therefore be necessary to present the variable definitions pertinent to claim 3 either in the claim itself, or in the specification in a form such that they directly impact the claims.

23. Applicant's arguments with respect to anticipation and obviousness of claims 1-7 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

24. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip Stimpert whose telephone number is (571)270-1890. The examiner can normally be reached on Mon-Fri 7:30AM-4:00PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on (571) 272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Devon C Kramer/  
Supervisory Patent Examiner, Art  
Unit 3746

/P. S./



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30 January 2009